ELBUG
SUPPLEMENT TO BEEBUG

VOLUME 3 NUMBER 5
APRIL 1986

HIGH SCORES

Here are the latest games high scores achieved by ELBUG members. We are always pleased to display the results of your hours toiling at the fire key, so keep them coming.

Supplier	Game	Score	Player
ACORNSOFT	Bugzap	11380	D.Devlin
ELBUG MAG	Air Raid	3250	P.Seward
ELBUG MAG	Builder Bob	607	D.Devlin
ELBUG MAG	Galactic Invasion	104200	D.Devlin
ELBUG MAG	Moon Pod	34	P.Seward
ELBUG MAG	Robot Attack	7170	K.Bishop
ELBUG MAG	Spider Man	5680	D.Devlin
ICON	Space Station Alpha	1650	D.Devlin
IJK	Hyperdrive	3420	C.Seward
IMAGINE	Pedro	7630	D.Devlin
MICRO POWER	Felix & Evil Weevils	23500	K.Bishop
MICRO POWER	Frenzy	626404	D.Devlin
MICRO POWER	Invaders	13900	K.Bishop
MICRO POWER	Mine	227480	C.Seward
US GOLD	Beach Head	134000	C.Seward

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This month's ELBUG magazine cassette includes several of the programs from this month's BEEBUG - the Inbetweening graphics display program, the Do-It-Yourself Basic program to add your own commands to Basic, the First Course example on hexadecimal, and the Jason Mason game - plus the Thirty One game in this month's ELBUG supplement. All this for just £3.00 plus 50p post and packing.

Note that ELBUG cassettes from Vol.3 No.3 onwards are only available to order. Please address all orders to the St. Albans address, mark the envelope 'ELBUG cassette', and allow at least ten days for delivery.

Your Guide to BEEBUG

No alterations are required to the programs appropriate to the Electron from this month's BEEBUG. In fact, most of the programs in BEEBUG this month will work on an Electron. A few general comments on converting Beeb programs to the Electron may also prove useful.

Beeb programs sometimes fail to run properly on the Electron because of the Beeb's mode 7 and extra sound facilities. However, conversion rarely proves very difficult.

The Beeb's mode 7 display is of the same format as the mode 6 display that ELBUG members know but with a full range of colours and crude graphics. Mode 7 is not available on the Electron. However, the Electron defaults to mode 6 when it encounters a MODE 7 command. So BBC micro programs that include a mode 7 display will therefore run on the Electron but often with a corrupted (and monochrome) display.

The Beeb has three sound channels each with full control over the volume of notes. Electron Basic includes all the SOUND and ENVELOPE parameters that are used in the BBC micro even though several have no effect. This means that Beeb programs making full use of sound will still run on the Electron unaltered, though not, of course, producing the full sound effect.

The other major difference between the Electron and the BBC micro is speed. The Electron is much slower, and particularly slow in modes 0, 1, and 2. BBC micro programs often benefit from a change of mode (admittedly, with a loss of some colours) when running them on the Electron. When changes are needed they will be given in this ELBUG supplement.

HINTS

Of this month's hints and tips, the following are applicable to Electron owners:

KEYBOARD INPUT IN AN EVENT
ERROR LISTING
THOSE WIDE OPEN SPACES
SINGLE KEY MERGE

INBETWEENING

This entertaining graphics program can be used for serious purposes or just for fun.

The program is fully compatible with the Electron and can be run without alteration.

DO-IT-YOURSELF BASIC

Although the Electron's Basic is very extensive there are always those extra commands that you would like to see included. Now's your chance to add them on.

This first article shows how to create extra Basic commands and gives an example. It all works on the Electron without any changes.

FLEET STREET EDITOR

The excellent Fleet Street Editor package is not available on the Electron.

DIRECT DISPLAY UTILITY

This handy utility will list a program direct from cassette or disc without affecting the program you already have in memory - very useful for inspecting or copying sections of an old program while developing a new one.

The direct display utility works perfectly on an Electron.

MICRO PROLOG

The excellent Micro Prolog is not available for the Electron as yet but Acorn may well produce a cartridge for the Plus-1 containing this language in the near future.

COMPUTER TOOLS FOR THE BLIND

Electron users will be just as interested as BBC owners to see how computer programs can be adapted for the blind.

INBETWEENING COMPETITION

The competition to find the best inbetweening display sequence is, of course, open to Elbug members too. Send us

your entry.

MUSIC SYSTEMS UPDATE

None of the music systems looked at in this review are available for the Electron.

FIRST COURSE

Introducing hexadecimal

If hexadecimal is all Greek to you then this article is just what you need. The hexadecimal numbering system is important in computing and something that every ELBUG member should try to come to grips with. This article will help out.

The example programs are fully compatible with the Electron.

GETTING A BETTER VIEW - Part 2

The excellent View word processor is, of course, available for the Electron as a cartridge for the Plus-1. All users of View would do well to see how this powerful software can be fully exploited. Even if you do not own a copy of View at present, this article will show you some of the features that the word processor can provide.

WINDOWS AND ICONS

Contrary to what was reported in last month's 'Your Guide to BEEBUG', this program will not operate correctly on the Electron. This is due to a very subtle use in the program of the 6845 graphics controller chip in the Beeb which the Electron does not contain.

Unfortunately this incompatibility was found only when testing the program for the ELBUG magazine cassette at a stage too late for alteration of the magazine. Our apologies to any ELBUG members inconvenienced by this oversight.

THE MORLEY TELETEXT ADAPTOR

The Morley Teletext adaptor is not available for the Electron as it requires a mode 7 display. However, Morley is currently working on a model that not only will give Electron users access to Teletext, but also a mode 7 display for their computer. Watch this space for further news.

WORKSHOP

The 6522 timers - Part 2

Unfortunately the Electron has no user VIA (6522) to provide timers, so this article will be little use to most ELBUG members.

However, if you have a User Port interface which contains a 6522 chip (such as the Mushroom Printer and User Port interface reviewed in Elbug Vol.2 No.4) then you will be able to make use of the routines given here. Note, however, that the addresses of the VIA registers given in the article will be wrong for such an add-on interface (for the Mushroom interface, for example, you should subtract &100 from the addresses given) and you should consult the interface manual.

INTERACTIVE 3D

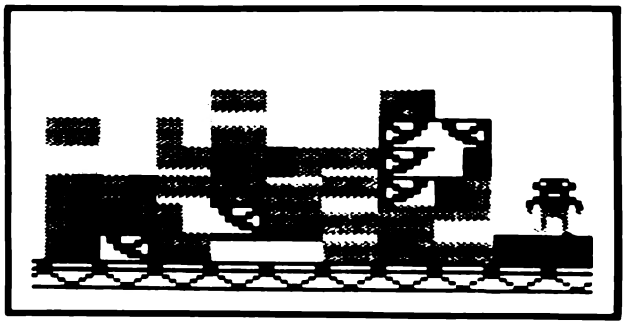
Unfortunately this fascinating wireframe-model development tool is not available on the Electron.

ACROSS THE TUBE

Although Acorn has demonstrated Tube interfaces running on an Electron, no production model has ever been produced so this complex subject will not be of interest to many ELBUG members.

JASON MASON

Help Jason build up a variety of objects from the heap of rubble on the screen. This game with a difference will test both your brainpower and your co-ordination.



Jason Mason runs perfectly on an Electron with no changes at all.

THIRTY ONE

Want to improve your mental arithmetic? Pit your wits against the might of the Electron with this brain-straining game from Dave Robinson.

This entertaining game has all the qualities of a classic. It is simple in the extreme to play but very difficult to win when playing against the computer.

The idea of the game is to select numbers, in turn with your opponent, so that your addition increases their total to the magic figure of 31. Alternatively, if you cannot make 31, then force him to go over that value.

You don't have to play Thirty One against your Electron. You can choose to play this game against a friend. However, if you do elect to try your hand against your own computer, be warned that your Elk does not like to lose! He plays a very strong game - so strong that a little bit a judicious handicapping has been included. All the information that you need to play the game is included in an instruction page displayed on the screen.

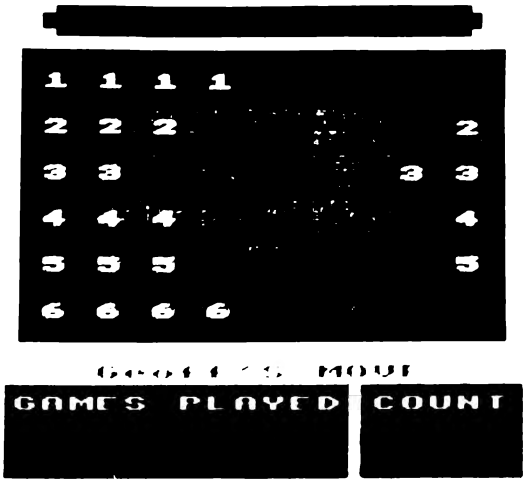
The program provides an attractive implementation of the game that makes good use of both the graphics and sound facilities of the Electron and should keep you busy for hours.

PROGRAM NOTES

Included in this program is a useful treble height character routine (between lines 2430 and 2530) used to display the current total. You can use this in your own programs: Copy the procedure into your own program and call it with PROCtreble(S$,X,Y) where S$ is the string to be printed in treble height and X and Y are the X and Y character co-ordinates of the position on the screen that you want the text to appear.

```
  10 REM Program THIRTY ONE
  20 REM Version E0.1
  30 REM Author  Dave Robinson
  40 REM ELBUG   APRIL 1986
  50 REM Program subject to copyright
  60 :
 100 ON ERROR GOTO300
 110 DIM board%(6)
 120 MODE1
 130 PROCinstr
 140 PROCinit
 150 MODE5
 160 PROCscreen
 170 REPEAT
 180 REPEAT
 190 *FX15,1
 200 PROCplay(A$)
 210 T%=2
 220 PROCcount
 230 IF A$=N$ THEN A$=E$ ELSE A$=N$
 240 UNTIL end%
 250 PROCscore
 260 PROCreset
 270 UNTIL FALSE
 280 END
 290 :
 300 ON ERROR OFF
 310 MODE6
 320 IF ERR<>17 THEN REPORT:PRINT" at l
ine ";ERL ELSE PROCend
 330 END
 340 :
1000 DEFPROCinit
1010 FOR I%=1 TO 6:board%(I%)=4:NEXT
1020 T%=1:end%=FALSE
1030 C%=0:A$=E$:S$=E$
1040 S1%=0:S2%=0
1050 ENDPROC
1060 :
1070 DEFPROCreset
1080 FOR I%=1 TO 6:board%(I%)=4:NEXT
1090 turn%=1:end%=FALSE:C%=0
1100 COLOUR130:COLOUR0
1110 FOR I%=2 TO 8 STEP2
1120 FOR J%=1 TO 6
1130 SOUND&11,-15,100+I%*J%,2
1140 PRINTTAB(I%,J%*3+2);J%
1150 PRINTTAB(I%+9,J%*3+2);SPC1
1160 NEXT:NEXT
1170 VDU28,15,30,16,28,17,131,12,26
1180 IF S$=E$ THEN S$=N$ ELSE S$=E$
1190 A$=S$:elk%=FALSE
1200 IF comp% AND A$=E$ THEN elk%=TRUE
1210 ENDPROC
1220 :
1230 DEFPROCinstr
1240 PROCoff
```

```
 1250 PRINTTAB(14,2)"THIRTY ONE"
 1260 PRINTTAB(14,3)STRING$(10,"=")
 1270 COLOUR2
 1280 PRINTTAB(7,5)"The aim of the game
is to"
 1290 PRINTTAB(6,7)"count up to 31 - or
as near"
 1300 PRINTTAB(6,9)"possible below that
number."
 1310 PRINTTAB(4,12)"You take turns to s
hift numbers"
 1320 PRINTTAB(4,14)"to the right. The c
ount is the"
 1330 PRINTTAB(4,16)"total value of numb
ers shifted."
 1340 PRINTTAB(6,19)"If it is impossible
 for you"
 1350 PRINTTAB(6,21)"to score 31, try an
d force"
 1360 PRINTTAB(6,23)"your opponent to go
 over 31."
 1370 PROCspc:PROCinput
 1380 E$=LEFT$(E$,9):N$=LEFT$(N$,9)
 1390 PROCspc
 1400 ENDPROC
 1410 :
 1420 DEFPROCspc
 1430 PROCoff:COLOUR1
 1440 PRINTTAB(14,29)"PRESS SPACE"
 1450 REPEAT UNTIL GET=32
 1460 ENDPROC
 1470 :
 1480 DEFPROCscreen
 1490 PROCoff
 1500 VDU19,0,4,0,0,0
 1510 VDU19,3,0,0,0,0
 1520 VDU24,164;944;1120;1007;
 1530 GCOL0,131:CLG:VDU26
 1540 COLOUR131:COLOUR2
 1550 PRINTTAB(2,1)" * THIRTY ONE * "
 1560 VDU24,80;304;1200;912;
 1570 GCOL0,131:CLG
 1580 GCOL0,130
 1590 FORI%=368 TO 848 STEP96
 1600 VDU24,110;I%-40;1170;I%+40;
 1610 CLG:NEXT:VDU26
 1620 GCOL0,3
 1630 MOVE640,304:DRAW640,912
 1640 COLOUR130:COLOUR0
 1650 FOR I%=2 TO 8 STEP2
 1660 FOR J%=1 TO 6
 1670 SOUND&11,-15,100+I%*J%,2
 1680 PRINTTAB(I%,J%*3+2);J%
 1690 NEXT:NEXT
 1700 VDU24,54;20;842;212;
 1710 GCOL0,131:CLG
 1720 VDU24,874;20;1240;212;
 1730 CLG:VDU26
 1740 GCOL0,2
 1750 MOVE54,20:DRAW842,20
```




```
 1760 DRAW842,212:DRAW54,212:DRAW54,20
 1770 MOVE874,20:DRAW1240,20
 1780 DRAW1240,212:DRAW874,212:DRAW874,2
0
 1790 COLOUR1:COLOUR131
 1800 PRINTTAB(1,26)"GAMES PLAYED";TAB(1
4,26)"COUNT"
 1810 COLOUR2
 1820 PRINTTAB(1,28)E$;TAB(1,30)N$
 1830 PRINTTAB(11,28);S1%
 1840 PRINTTAB(11,30);S2%
 1850 ENDPROC
 1860 :
 1870 DEFPROCelk
 1880 T%=TIME: REPEAT UNTIL TIME>T%+100
 1890 elk%=NOT elk%
 1900 IF T%=1 REPEAT:A%=RND(5):UNTIL A%<
>4:PROCcheck(A%):PROCmove(A%):ENDPROC
 1910 Z%=38
 1920 REPEAT
 1930 Z%=Z%-7
 1940 A%=Z%-C%
 1950 UNTIL A%>-1 AND A%<7
 1960 IF A%=0 A%=2
 1970 REPEAT
 1980 PROCcheck(A%)
 1990 IF NOT ok% A%=RND(6)
 2000 UNTIL ok%
 2010 PROCmove(A%)
 2020 ENDPROC
 2030 :
 2040 DEFPROCplay(name$)
 2050 COLOUR128:COLOUR2
 2060 P%=(20-(LEN name$+7))DIV2
 2070 PRINTTAB(0,24)SPC20
 2080 PRINTTAB(P%,24)name$;"'S MOVE";
 2090 IF elk% PROCelk:ENDPROC
 2100 REPEAT
 2110 REPEAT:A%=GET
 2120 UNTIL A%>48 AND A%<55
 2130 A%=A%-48
 2140 PROCcheck(A%)
```

```
2150 IF NOT ok% VDU7
2160 UNTIL ok%
2170 PROCmove(A%)
2180 IF comp% THEN elk%=NOT elk%
2190 ENDPROC
2200 :
2210 DEFPROCcheck(num%)
2220 ok%=FALSE
2230 IF board%(num%)=0 ENDPROC
2240 board%(num%)=board%(num%)-1
2250 ok%=TRUE
2260 ENDPROC
2270 :
2280 DEFPROCmove(num%)
2290 SOUND1,-15,120,4
2300 SOUND1,-15,180,4
2310 COLOUR130:COLOUR0
2320 PRINTTAB(board%(num%)*2+2,num%*3+2
)SPC1
2330 PRINTTAB(board%(num%)*2+11,num%*3+
2);num%
2340 ENDPROC
2350 :
2360 DEFPROCcount
2370 C%=C%+A%
2380 COLOUR131:COLOUR2
2390 PROCtreble(STR$C%,14,28)
2400 IF C%>=31 end%=TRUE
2410 ENDPROC
2420 :
2430 DEFPROCtreble(A$,K,L)
2440 A%=&A:X%=0:Y%=&A:D=&A00
2450 FOR N=1 TO LEN A$
2460 B$=MID$(A$,N,1):?D=ASC B$
2470 CALL &FFF1
2480 VDU23,240,D?1,D?1,D?1,D?2,D?2,D?2,
D?3,D?3
2490 VDU23,241,D?3,D?4,D?4,D?4,D?5,D?5,
D?5,D?6
2500 VDU23,242,D?6,D?6,D?7,D?7,D?7,D?8,
D?8,D?8
2510 PRINTTAB(K+N,L)CHR$240;TAB(K+N,L+1
)CHR$241;TAB(K+N,L+2)CHR$242
2520 NEXT
2530 ENDPROC
2540 :
2550 DEFPROCscore
2560 IF C%>31 AND A$=E$ S1%=S1%+1:W$=E$
2570 IF C%>31 AND A$=N$ S2%=S2%+1:W$=N$
2580 IF C%=31 AND A$=E$ S2%=S2%+1:W$=N$
2590 IF C%=31 AND A$=N$ S1%=S1%+1:W$=E$
2600 COLOUR128:COLOUR2
2610 P%=(20-(LEN W$+5))DIV2
2620 PRINTTAB(0,24)SPC20
2630 PRINTTAB(P%,24)W$;" WINS"
2640 COLOUR131
2650 PRINTTAB(11,28);S1%
2660 PRINTTAB(11,30);S2%
2670 T%=TIME:REPEAT
2680 SOUND1,-15,RND(100)+50,1
2690 UNTIL TIME>T%+300
2700 ENDPROC
2710 :
2720 DEFPROCinput
2730 elk%=FALSE:comp%=FALSE
2740 VDU28,0,31,39,5
2750 CLS:COLOUR2:VDU26
2760 PRINTTAB(7,6)"You can play the com
puter"
2770 PRINTTAB(6,8)"or against a friend
- beware"
2780 PRINTTAB(7,10)"Elk doesn't like to
lose."
2790 COLOUR3
2800 PRINTTAB(11,13)"Play Elk      1."
2810 PRINTTAB(11,15)"Play friend   2."
2820 PROCon:COLOUR1
2830 PRINTTAB(11,18)"Choose option ";
2840 REPEAT:A=GET:UNTIL A=49 OR A=50
2850 PRINTTAB(25,18)CHR$A
2860 COLOUR3
2870 IF A=49 PROCcomp:ENDPROC
2880 INPUTTAB(5,21)"Name of first playe
r: "E$
2890 INPUTTAB(5,23)"Name of second play
er: "N$
2900 COLOUR2:PROCoff
2910  PRINTTAB(5,26)"O.K. you take turn
s to start."
2920 ENDPROC
2930 :
2940 DEFPROCcomp
2950 elk%=TRUE:E$="ELK":comp%=TRUE
2960 PRINTTAB(5,21)"My name's ELK."
2970 INPUTTAB(5,23)"What's your name: "
N$
2980 COLOUR2
2990 PRINTTAB(2,26)"O.K. we'll take it
in turns to start."
3000 ENDPROC
3010 :
3020 DEFPROCon:VDU23,1,1;0;0;0;
3030 ENDPROC
3040 :
3050 DEFPROCoff:VDU23,1,0,0;0;0;0;
3060 ENDPROC
3070 :
3080 DEFPROCend
3090 PRINTTAB(10,4)"R E S U L T S"
3100 PRINTTAB(10,5)STRING$(13,"=")
3110 PRINT';S1%;" games to ";E$
3120 PRINT';S2%;" games to ";N$
3130 IF S1%=S2% PRINT'"A good draw"
3140 IF S1%>S2% PRINT'"I declare ";E$;"
the winner."
3150 IF S2%>S1% PRINT'"I declare ";N$;"
the winner."
3160 ENDPROC
```

SIDEWINDER

The Sidewinder interface from Wizard Development is an unusual combination: a joystick port and a ROM board. Geoff Bains investigates.

Product : Sidewinder
Supplier : Wizard Development
Alpha House, 10 Carver Street,
Sheffield, S1 4FS.
0742-752912
Price : £39.95

Wizard Development is a new company in the field of add-ons for the Electron. The first piece of equipment to emerge from this stable is the Sidewinder interface. This is a strange name for a strange product. Uniquely, the Sidewinder is a combination of joystick interface and ROM board.

The Sidewinder package consists of the interface itself and a tiny strip of instruction sheet containing around 200 words only. A bit more in the way of documentation would have been nice but I guess that all you really need to know is there.

The interface itself is about 6 inches by 4 inches cased in the inevitable cream coloured plastic but has a transparent lid. You can actually see what ROMs you have on the board without having to take the thing apart. To insert a ROM into one of the sockets you do have to take the lid off, of course, but this is easily achieved as the two halves of the case simply (but firmly) clip together.

The Sidewinder plugs into the expansion socket at the back of the Electron. A through connector is provided so you can plug a Plus-3 or some other add-on onto the back of it.

The board has sockets for four ROMs.

Electron Compatible ROMs

Name	Supplier	Supplier's Phone No.	Meant for:	Review
Starword	Slogger	0634-811634	Elk	ELBUG Vol.3 No.2
Starstore	Slogger	0634-811634	Elk	ELBUG Vol.3 No.2
Starmon	Slogger	0634-811634	Elk	-
Stargraf	Slogger	0634-811634	Elk	-
Tape To Plus-3	Slogger	0634-811634	Elk	-
Elkman	Slogger	0634-811634	Elk	ELBUG Vol.2 No.9
Advanced Disc Toolkit	ACP	0276-76545	Beeb	BEEBUG Vol.4 No.6
Addcomm	Vine Micros	0304-812276	Beeb	BEEBUG Vol.3 No.
View	Acornsoft	0223-214411	Beeb	ELBUG Vol.2 No.5
Viewsheet	Acornsoft	0223-214411	Beeb	ELBUG Vol.2 No.5
Viewstore	Acornsoft	0223-214411	Beeb	BEEBUG Vol.4 No.6
Graphics Extensions	Acornsoft	0223-214411	Beeb	BEEBUG Vol.4 No.7
ISO Pascal	Acornsoft	0223-214411	Beeb	BEEBUG Vol.3 No.6
LOGO	Acornsoft	0223-214411	Beeb	BEEBUG Vol.3 No.10
Comal	Acornsoft	0223-214411	Beeb	BEEBUG Vol.4 No.2
Electron Toolkit	Beebugsoft	0727-40303	Elk	-
Dumpmaster	Beebugsoft	0727-40303	Beeb	-
Help	Beebugsoft	0727-40303	Beeb	-

Partially Compatible ROMs

Graphics Extensions	Computer Concepts	0442-63933	Beeb	BEEBUG Vol.3 No.1
Printmaster	Computer Concepts	0442-63933	Beeb	-

One of these is already taken up by the 'Joyrom' joystick ROM of which more later, but you still have room for three more of your choice.

There are now a reasonable number of ROMs suitable for the Electron on the market, certainly a number far in excess of the number of cartridges for the Plus-1. These cover a wide range of applications and utilities and all offer the advantages of instant access to the software without loss of memory to hold the software itself. Many have been reviewed in these pages in past issues of ELBUG. However, there are also a number of ROMs designed for the BBC micro that will work at least partially on the Electron and are well worth a look at too (see the table on page 7).

For ELBUG members interested in writing their own ROM software, one of the ROM sockets on the Sidewinder is switchable, by way of a soldered wire link, to take either the normal 8K and 16K ROMs, or 8K and any 'home-grown' 4K ROMs.

However, the ROM board is only half of the Sidewinder. This board also includes a joystick interface. On the side of the case is a nine pin D-connector as used by the near-standard joysticks on Sinclair, Commodore, Atari and Amstrad micros. These joysticks are very easy to come by and quite cheap but they are only switch type controls, not the proportional controls of the BBC micro and the Plus-1.

However, this interface does not merely enable you to use a joystick, but to use it as a substitute for specified keys on the keyboard when playing games.

The substitution is all taken care of by the software in the 'Joyrom' already installed in one of the ROM sockets. This enables you to choose which key is simulated by each of the four directions that the joystick can be moved in and the fire key on the joystick.

The procedure is simple. You type in *JS\ON and the interface is enabled. Then, as prompted, you press the key that a game requires for controlling each of the four directions and fire. Now when you load in the game, it can be controlled from the joystick.

The idea is somewhat similar to the Powersoft joystick interface reviewed in ELBUG Vol.2 No.1.

The Sidewinder was tried with several games lying around the ELBUG offices and found to operate well with the majority. Even though this interface costs a fairly hefty £40 it is certainly a worthwhile buy for any Electron owner interested in both games and serious uses for his machine.

SALE PRICES SALE PRICES SALE PRICES SALE PRICES SALE PRICES SALE PRICES SALE

The Winter sales prices for back issues of the ELBUG magazine and cassette and for BEEBUGSOFT Electron software are still being maintained. These are:

ELBUG magazine	up to Vol.2 No.3	20p
ELBUG magazine	since Vol.2 No.3 (incl. BEEBUG)	£ 1.00
ELBUG mag. binder	any volume	£ 1.95
ELBUG mag. cassette	any issue	99p
Toolkit ROM	Basic programming aid	£11.25
EXMON cassette	Machine code monitor	£ 4.50
Sprites cassette	Sprite utilities	£ 4.50
Starter Pack cassette	Beginners program pack	£ 5.50
Paintmaster cassette	Drawing utility	£ 4.50
Superplot cassette	Graph and disgram utility	£ 4.50

Postage is at the normal rates - For mag cassettes, binders and software: 50p for the first item and 30p for each subsequent item. For magazines: 30p for the first item and 10p for each subsequent item. All orders to the High Wycombe address please.